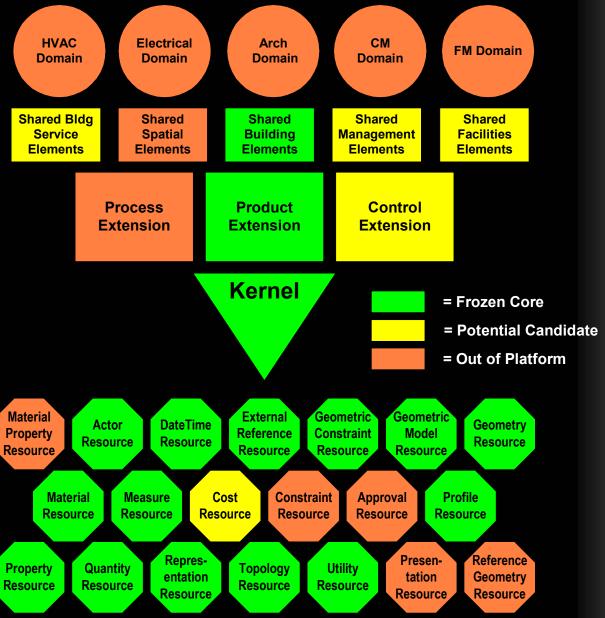# BS-8 Project and HVAC Implementers Agreements

Dr. Vladimir Bazjanac
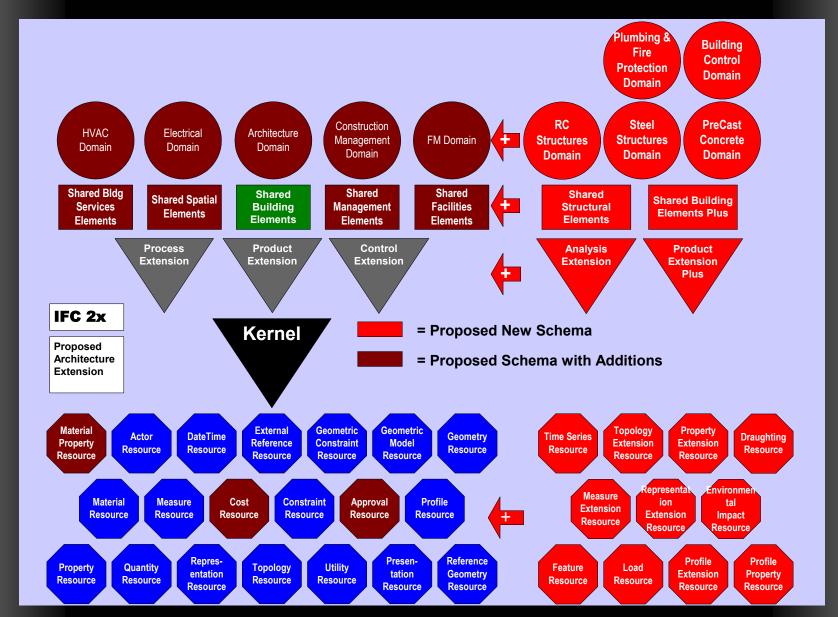
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IFC2x

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IFC 2x2: Preview

BS-8 Project

- **IAI Project: Building Services project number 8**
- **Completion of the IFC HVAC extension schemata**
  - **HVAC equipment and systems**
  - **Electrical systems**
  - **Controls**
  - **Connectivity**
  - **Time series**
- **Participation**
  - **13 organizations in eight countries**
- **Support**
  - **Governments (Australia, EU, Finland, Singapore and U.S. - federal and state)**
  - **Private sector (Finnish, French, Norwegian and Swedish)**

BS-8 Project Goals

- **Extend IFC schemata to support the modeling and simulation of HVAC components and systems**

- **Support the use of various building simulation tools**

- **Import information from upstream applications in *.ifc or XML format**
  - **Building geometry**
  - **General and performance specifications of materials**
  - **General and performance specifications of equipment, systems and furnishings**

- **Export information to downstream applications in *.ifc or XML format**
  - **Other HVAC applications**
  - **Cost estimating applications**
  - **Commissioning and building operations/maintenance software**
  - **Code-checking applications**
  - **Software that serves utility companies**
  - **Many other types of applications**

Processes Supported by BS-8

- **Fully supported process:** *Building energy performance simulation*

- **Implicitly supported processes:**

  1. Dynamic load estimation
  2. HVAC design
  3. HVAC equipment selection
  4. Measurement and verification (HVAC view)
  5. Building performance metrics (HVAC view)
  6. HVAC system and equipment commissioning
  7. HVAC system and equipment retrofit
  8. HVAC system and equipment physical layout
  9. HVAC system and equipment product data (catalogues, external data bases)

Processes Supported by BS-8

- **Partially supported processes:**
  - Cost estimating
  - Procurement
  - Service
  - Energy code compliance
  - Maintenance
  - Operations
  - Fault detection and diagnostics
  - Emergency response
  - Construction and installation
  - Utility billing and cost allocation
  - Interference checking
  - HVAC construction documents
  - Accessibility

Elements of IFC Interface to E+

- **Building geometry**
  - **Multi-sided polygons**
  - **Space boundaries**
  - **Correct segmentation of two-sided constructions**
- **Materials/layers/constructions**
  - **Import from IFC file (when sufficient)**
  - **Interactive access of external data bases/libraries**
- **Equipment and systems definitions**
  - **"Static" definitions**
- **Simulation I/O data**
  - **Reference(s) to external file(s) that contain complete E+ simulation run input**
  - **Reference(s) to external file(s) that contain complete E+ simulation run output**

Implementers' Agreements

- **Define the set of data and the corresponding data definitions that each participating application *needs to be able to exchange***

- **Agreements by all participating applications to *all* implement**
  - **The *same set* of IFC HVAC definitions**
  - **Implement the same definitions the *same way***

- **Agree to participate in tests**

- **Agree to a time table**

Questions?

Thank you